Part a)

Decimal: 1

1 ÷ 2 = 0 remainder 1

Binary: 1

Decimal: 9

9 ÷ 2 = 4 remainder 1
4 ÷ 2 = 2 remainder 0
2 ÷ 2 = 1 remainder 0
1 ÷ 2 = 0 remainder 1

reverse

Binary: 1001

Decimal: 100

100 ÷ 2 = 50 remainder 0
50 ÷ 2 = 25 remainder 0
25 ÷ 2 = 12 remainder 1
12 ÷ 2 = 6 remainder 0
6 ÷ 2 = 3 remainder 0
3 ÷ 2 = 1 remainder 1
1 ÷ 2 = 0 remainder 1

reverse

Binary: 1100100

Decimal: 624

624 ÷ 2 = 312 remainder 0
312 ÷ 2 = 156 remainder 0
156 ÷ 2 = 78 remainder 0
78 ÷ 2 = 39 remainder 0
39 ÷ 2 = 19 remainder 1
19 ÷ 2 = 9 remainder 1
9 ÷ 2 = 4 remainder 1
4 ÷ 2 = 2 remainder 0
2 ÷ 2 = 1 remainder 0
1 ÷ 2 = 0 remainder 1

reverse

Binary: 1001110000

Part b) Hexadecimal

Decimal: 10

10 ÷ 16 = 0 remainder 10 → A

Hexadecimal: A

Decimal: 40

40 ÷ 16 = 2 remainder 8
2 ÷ 16 = 0 remainder 2

reverse

Hexadecimal: 28

Decimal: 624

624 ÷ 16 = 39 remainder 0
39 ÷ 16 = 2 remainder 7
2 ÷ 16 = 0 remainder 2

reverse

Hexadecimal: 270

Decimal: 999

999 ÷ 16 = 62 remainder 7
62 ÷ 16 = 3 remainder 14 → E
3 ÷ 16 = 0 remainder 3

reverse

Hexadecimal: 3E7

Part c) Hexadecimal to Decimal

Hex: 5

$5 \times 16^0 = 5 \times 1 = 5$

Decimal: 5

Hex: BD92

$B \times 16^3 + D \times 16^2 + 9 \times 16^1 + 2 \times 16^0$

$= 11 \times 16^3 + 13 \times 16^2 + 9 \times 16 + 2 \times 1$

$= 45,056 + 3,328 + 144 + 2 = 48,530$

Decimal: 48,530

Hex: A

$A = 10$

$10 \times 16^0 = 10 \times 1 = 10$

Decimal: 10

Hex: 3F

$3 \times 16^1 + F \times 16^0$

$= 3 \times 16 + 15 \times 1$

$= 48 + 15 = 63$

Decimal: 63

Hex: 100

$1 \times 16^2 + 0 \times 16^1 + 0 \times 16^0$

$= 256 + 0 + 0 = 256$

Decimal: 256